

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	45824	electroplat\$9	US- PGPUB; USPAT
2	BRS	L2	18355	1 and electrode	US- PGPUB; USPAT
3	BRS	L3	370	2 and plating near8 cycle	US- PGPUB; USPAT
4	BRS	L4	10	3 and net near8 plating near8 charge	US- PGPUB; USPAT
5	BRS	L5	7	4 and compar\$9 near8 plating near8 profile	US- PGPUB; USPAT
6	BRS	L6	9	1 and compar\$9 near8 plating near8 profile	US- PGPUB; USPAT
7	BRS	L7	11	1 and net near8 plating near8 charge same electrode	US- PGPUB; USPAT
8	BRS	L8	12	1 and net near8 plating near8 (charge or current) same electrode	US- PGPUB; USPAT
9	BRS	L9	8846	electroplat\$9	USOCR
10	BRS	L11	2586	9 and electrode	USOCR
11	BRS	L12	68	11 and plating near8 cycle	USOCR
12	BRS	L13	0	12 and net near8 plating near8 (charge or current) same electrode	USOCR
13	BRS	L14	42	12 and plating near8 (charge or current) same electrode	USOCR
14	BRS	L15	0	14 and (comparing or compare or comparison) near8 plating near8 profile	USOCR
15	BRS	L16	0	14 and (comparing or compare or comparison) with plating near8 profile	USOCR
16	BRS	L17	0	14 and (comparing or compare or comparison) same plating near8 profile	USOCR
17	BRS	L18	1651	electroplat\$9	EPO

	Type	L #	Hits	Search Text	DBs
18	BRS	L19	0	18 and net near8 plating near8 (charge or current) same electrode	EPO
19	BRS	L21	0	20 and (comparing or compare or comparison) with plating near8 profile	EPO
20	BRS	L20	6	18 and plating near8 (charge or current) same electrode	EPO
21	BRS	L22	19582	electroplat\$9	DERWEN T
22	BRS	L23	0	22 and (comparing or compare or comparison) with plating near8 profile	DERWEN T
23	BRS	L24	149	22 and plating near8 (charge or current) same electrode	DERWEN T
24	BRS	L25	14	22 and plating near8 profile	DERWEN T
25	BRS	L26	528	electroplat\$9	IBM_TD B
26	BRS	L27	0	26 and (comparing or compare or comparison) with plating near8 profile	IBM_TD B
27	BRS	L28	0	27 and plating near8 (charge or current) same electrode	IBM_TD B
28	BRS	L29	0	26 and plating near8 profile	IBM_TD B

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LANGUAGE: English
AB A model for galvanostatic pulse plating via pulse current (PC) and pulse reverse (PR) modes was developed and compared with exptl. obtained electrode responses during Cu deposition from a CuSO₄-H₂SO₄ solution onto a rotating disk electrode. In addition to all forms of mass transport, electrode kinetics, and homogeneous reactions, the model incorporates capacitance effects due to double-layer charging and adsorption of an intermediate. Two important modifications from the previous model were made: fully transient rather than steady-state electrode kinetics and a series rather than parallel connection between the adsorption pseudocapacitance and faradaic reactions. The model provides excellent quant. agreement with the exptl. results for both PR and PC plating for the entire range of conditions studied and shows considerable improvement over the previous version, particularly for PR plating. Fitting the model to some of the exptl. data reveals that the double-layer capacity varies inversely with the square root of frequency for pulses of 500 Hz or more. Electrode responses do not totally become d.c.-like at frequencies \leq 50 kHz. Also, at high enough frequencies (\geq 5 kHz) during PR plating, the electrode potentials do not rise above the open-circuit potential during the reverse-time, indicating that Cu dissoln. does not occur and leading to a response similar to that observed during high-frequency PC plating.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:499151 CAPLUS

DOCUMENT NUMBER: 122:276515

TITLE: Application of scanning vibrating electrode technique to study the localized corrosion of hardfacing alloy in sodium chloride solution

AUTHOR(S): Tsuru, Yutaka; Sekitani, Masanori; Nakamura, Zyunichi; Saitou, Akio

CORPORATE SOURCE: Dept. of Mat. & Eng., Kyushu Inst. of Tech., Kitakyushu, 804, Japan

SOURCE: Zairyo (1994), 43(494), 1387-92
CODEN: ZARYAQ; ISSN: 0514-5163

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB A microelectrode consisting of an Ag/AgCl reference electrode was prepared by using the electroplating method on a tungsten wire as a corrosion current sensor for the scanning vibrating electrode technique (SVET), and it was applied to measure the corrosion current profile over a hardfacing alloy after corrosion in 10-3M sodium chloride. A good correlation was observed between the pitting corrosion current profile and the surface morphol. of the corroded specimen. The pitting corrosion of the specimen developed in a chromium depleted zone between beads of weld metal, and manganese sulfide inclusions were always found in the pits along the chromium depleted zone.

L7 ANSWER 3 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:615710 CAPLUS

DOCUMENT NUMBER: 105:215710

TITLE: Electrodeposition of nickel by asymmetric sine wave current

AUTHOR(S): Soares, D. M.; Teschke, O.

CORPORATE SOURCE: Inst. Fis. "Gleb Wataghin", Univ. Estad. Campinas, Campinas, 13100, Brazil

SOURCE: Advances in Hydrogen Energy (1986), 5 (Hydrogen Energy Prog. 6, Vol. 1), 390-3
CODEN: AHENDB; ISSN: 0276-2412

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Metal electroplating using a steady c.d. may result in

an irregular morphol. of the plates. Pulse techniques were shown to provide the best method to obtain good distribution of the metal which is a desirable characteristic for electrodes for electrolysis of H₂O. A sine-wave current generator with a 200 A peak current was developed and tested using Ni as the metal. Adherence and uniformity of the electroplate was found to be a function of asym. sine-wave current parameters.

L7 ANSWER 4 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:560861 CAPLUS

DOCUMENT NUMBER: 105:160861

TITLE: Kinetics of bright copper electroplating in sulfuric acid copper-electroplating solutions. 1. Adsorption of polypropylene glycol on a copper cathode

AUTHOR(S): Simkunaite, D.; Valentelis, L.; Matulis, J.

CORPORATE SOURCE: Inst. Khim. Khim. Tekhnol., Vilnius, USSR

SOURCE: Lietuvos TSR Mokslu Akademijos Darbai, Serija B: Chemija, Technika, Fizine Geografija (1986), (3), 51-8

CODEN: LMDBAL; ISSN: 0024-2993

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The method of galvanostatic switching on the current showed the state of the surface of a Cu electrode at different moments during the electrolysis in H₂SO₄ solns. for Cu electroplating, containing CuSO₄ 0.03, H₂SO₄ 0.43M, and polypropylene glycol (I) 0.1mM. On the basis of the exptl. results, the degree of adsorption (θ) by the Cu electrode surface and certain kinetic parameters of Cu electroplating were calculated (diffusion coefficient, Tafel consts., and exchange current). The θ of the Cu electrode under conditions approximating equilibrium, when the change in Cu²⁺ concentration in the near-electrode layer is small, is very significant. The discharge of Cu²⁺ occurs on the surface, almost maximally blocked by the addition of I, where the values of θ are as follows: $\theta(I) \approx \theta(II) .apprx eq.\theta(III) \approx 0.94$.

L7 ANSWER 5 OF 36 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1975:36511 CAPLUS

DOCUMENT NUMBER: 82:36511

TITLE: Electrodeposition of manganese from pure baths

AUTHOR(S): Gamali, I. V.; Trofimenko, V. V.; Vorozhko, A. V.

CORPORATE SOURCE: USSR

SOURCE: Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1974), 47(9), 2035-9

CODEN: ZPKHAB; ISSN: 0044-4618

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The measurements of dependencies of Mn [7439-96-5] current efficiency on the cathode c.d. 0-0.4 A/cm² in purified neutral or ammoniacal solns. of 0-2.0 g-equiv/1. MnCl₂ and the results of x-ray structural and electron-microscopic studies of corresponding Mn plates proved that Mn electroplating in a bath where the ratio NH₄⁺/Mn²⁺ = 2.5 is affected by the formation of complexes of Mn²⁺ and NH₃ [7664-41-7] in the diffusion layer. The dependency of Mn plate structure on the c.d. showed 3 areas. In the 1st area, the Mn current efficiency uniformly increased, the deposition was in equilibrium and obtained plates were formed by macrocryst. γ -Mn. In the 2nd area, the decrease of current efficiency occurred and the crystalline structure contained α - + β -Mn. In the 3rd area, the current efficiency practically did not depend on the c.d. and deposits with high internal stress and hardness were formed only by α -Mn. The increase of NH₄⁺ concentration or decrease of Mn²⁺ concentration caused the displacement of the α -Mn formation to the area of lower c.d. in both types of baths. In the solns. where ratio

$\text{NH}_4^+/\text{Mn}^{2+} = 2.5$, the electroplating was affected by $\text{Mn}(\text{OH})_2$; the Mn current efficiency at low c.d. was nearly equal to zero and the electrode was covered by a layer of hydrates.

L7 ANSWER 6 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 2006(17):9519 COMPENDEX
TITLE: Electrodeposition of magnetic CoPd thin films.
Influence of plating condition.
AUTHOR: Takata, Fernanda M. (Instituto de Quimica USP,
05513-970 Sao Paulo, SP, Brazil); Sumodjo, Paulo T. A.
MEETING TITLE: 208th Meeting of The Electrochemical Society.
MEETING LOCATION: Los Angeles, CA, United States
MEETING DATE: 16 Oct 2005-21 Oct 2005
SOURCE: Meeting Abstracts v MA 2005-02 2005.p 1253
SOURCE: 208th Meeting of The Electrochemical Society - Meeting
Abstracts
ISSN: 1091-8213
PUBLICATION YEAR: 2005
MEETING NUMBER: 67008
DOCUMENT TYPE: Conference Article
TREATMENT CODE: Theoretical
LANGUAGE: English

AN 2006(17):9519 COMPENDEX

AB There is a great interest in magnetic thin films, especially in Co-based thin film alloys, due to their wide range of application in magnetic data reading/storage devices. These films are usually prepared by physical deposition methods which require ultrahigh vacuum techniques. Because of the well known advantages of electroplating over other means of thin films production, many studies involving magnetic thin films focus on the optimization of the electrodeposition process. Electrodeposition has several advantages over dry processes: (1) electrodeposition does not require vacuum technology and consequently is less expensive; (2) it can be easily upscaled for use in large size areas; (3) the experimental systems are simple; and (4) can be a room-temperature technology. It is well known the critical role of additives in electrodeposition processes. Thus, additives are necessary to produce electrodeposits with desired properties, to increase deposition rate, to stabilize the plating bath or even to process thermodynamically unfavorable processes. In this paper we report results on the electrodeposition of CoPd alloys from an alkaline chloride bath, containing glycine as additive. Current efficiencies (ϵ), composition (evaluated by atomic emission spectroscopy), microstructural, morphological and magnetic properties of the alloys are discussed in terms of the varied plating conditions: bath composition and pH, and current density.

Glycine concentration was always twice the total metal concentration (maintained constant 0.3 mol L⁻¹). The pH (adjusted with ammonia) and relative Co and Pd concentrations were varied. Current density (j) was varied from 5 to 175 mA cm⁻². For the first series of experiments the pH of the solution was varied: 6.5, 7.5, 8.4 and 9.6. The metal concentration ratio was 80%Co:20%Pd. In this series of experiments, it was observed that ϵ was not affected by bath pH. For $j \geq 50$ mA cm⁻², the average ϵ value was 76%. For $j < 50$ mA cm⁻², ϵ increased with j reaching a maximum of 85%, for $j < 25$ mA cm⁻² for all baths. Alloy composition was independent of the pH of the solution. For applied current densities ≥ 50 mA cm⁻² the CoPd alloy composition was: 72%at Co 28%at Pd. When the applied current density was < 50 mA cm⁻² the Co content in the alloy diminishes. Thus, application of high current densities Co electrodeposited preferentially. This occurs because at lower current densities the electrode potential is low, close to Pd potential reduction ([similar to] 0 V vs Ag/AgCl). Application of high current densities (≥ 50 mA cm⁻²), the potential is higher and, in this case Co is electrodeposited preferentially. The morphology for all the obtained films showed that it was dependent on the applied current density. For $j \geq 50$ mA cm⁻² it was observed a typical cauliflower morphology. When the $j < 50$

mA cm⁻² the deposit presented a smooth surface. When the applied current density was 5 mA cm⁻² the resulting film from a bath at pH 6.5 showed a smooth surface presenting cracks. Using baths with pHs 7.5, 8.4 and 9.6 the deposit presented a rough surface containing holes. No cracks were observed, though. As the bath became more alkaline more holes were observed on the surface. Deposits were amorphous. More studies are being done to explain these results. For the set of experiments where the bath composition was varied, the Co:Pd ratios were: 95%Co:5%Pd, 80%Co:20%Pd, 60%Co:40%Pd and 40%Co:60%Pd. The pH of the solution was set at 6.5. Current efficiencies obtained for the CoPd were not affected by bath composition. Using $j \geq 50$ mA cm⁻², epsilon was constant around 75%. The alloy composition is dependent of the bath composition and the applied current density. More Co is deposited as higher is Co content in the bath. The morphology for all films is the same as already described and depends on the applied current density: for $j \geq 50$ mA cm⁻²: a cauliflower morphology; and for $j < 50$ mA cm⁻²: a surface with cracks. However, holes were not observed independently of the bath composition or current density. Cracks were always observed and the more palladium content in the CoPd alloy, the more cracks. XRD analysis also revealed that the CoPd alloys are amorphous. Magnetic properties were obtained applying a parallel magnetic field. The magnetic properties were completely different from those CoPd alloys already related¹⁻³. These films are not soft and the coercivities lie in the range from 84 to 555 Oe. The lowest and the highest coercivities were achieved when the bath composition was 95%Co:5%Pd and 40%Co:60%Pd, respectively. The magnetic saturation (Ms) is the highest when the % Co content in the CoPd alloy is the highest, naturally. Ms obtained varied from 0 to 1.73 T. The Ms = 0 was obtained for all alloy composition having a Pd content above 89% atomic. The value 1.73 T was obtained for the alloy composition 93.5%at Co/6.5%at Pd when the applied current density was 25 mA cm⁻². Bath composition was 95%Co:5%Pd. The coercivities obtained in this study are completely independent of the pH of the solution and the alloy and bath compositions. 3 Refs.

L7 ANSWER 7 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2006(17):8191 COMPENDEX

TITLE: Formation of copper pillar bumps by high speed copper electroplating.

AUTHOR: Wu, Bill (Nexx Systems, Billerica, MA 01821-3904, United States); Liu, Zhen; Keigler, Arthur

MEETING TITLE: 208th Meeting of The Electrochemical Society.

MEETING LOCATION: Los Angeles, CA, United States

MEETING DATE: 16 Oct 2005-21 Oct 2005

SOURCE: Meeting Abstracts v MA 2005-02 2005.p 1343

SOURCE: 208th Meeting of The Electrochemical Society - Meeting Abstracts

ISSN: 1091-8213

PUBLICATION YEAR: 2005

MEETING NUMBER: 67008

DOCUMENT TYPE: Conference Article

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English

AN 2006(17):8191 COMPENDEX

AB Emerging higher density, faster speed, and lower-cost flip-chip packaging demands more critical processing than the previous generation of flip-chip devices. Pillar bumping permits cost-effective fine-pitch bumping with very predictable standoff distances for better under filling while improving thermal and electrical performances compared to standard solder bumps¹. However, electrodeposition of 50 to 100 micron thick Cu pillars in deep photo patterned vias at an economical deposition rate is a challenge for wafer electroplating equipment. A high-speed through-mask copper deposition technique using a thin boundary layer wet processing module is presented in this paper². The vertical wet process module is equipped with a novel fluid agitation technique, Shear Plate[trademark], to promote mass transfer at the wafer surface for high speed or alloy

electrodeposition applications, as well as other wet process applications requiring a thin and uniform boundary layer. The copper pillar shape has become a very important issue to improve the connection reliability between the solder cap and wiring board. This demands tightly controlled processing of the pillar bumps to achieve a straight wall, flat top surface and uniform **electrode** height. Factors affecting the bump shape include **plating** chemistry, **current** wave form, **current** density and the fluid boundary layer thickness. These have been examined to quantify their role in producing uniform and flat structures at **plating** rates up to 5 microns per minute. **Results** show that bath chemistry including additives has a big impact on the bump shape. A thin and uniform boundary layer, which is capable of contouring into the bump opening down to 30um, effectively enhances the mass transfer thus increases the deposition rate. 2 Refs.

L7 ANSWER 8 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2004(26):5760 COMPENDEX

TITLE: Application of elimination voltammetry in the study of electroplating processes on the graphite electrode.

AUTHOR: Orinakova, Renata (Faculty of Science Institute of Chemistry P.J. Safarik Univ., SK 041 54 Kosice, Slovakia); Trnkova, Libuse; Galova, Miriam; Supicova, Magdalena

SOURCE: Electrochimica Acta v 49 n 21 Sep 1 2004 2004.p 3587-3594

CODEN: ELCAAV ISSN: 0013-4686

PUBLICATION YEAR: 2004

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical

LANGUAGE: English

AN 2004(26):5760 COMPENDEX

AB The **electrode** reaction mechanism of electrolytical coating by nickel on paraffin impregnated graphite **electrode** (PIGE) was investigated by cyclic voltammetry (CV) and elimination voltammetry with linear scan (EVLS). The EVLS, a relatively new method of processing electrochemical signals obtained by voltammetry, is able to eliminate some individual chosen currents from total voltammetric currents measured at different scan rates. During the electrodeposition of metals on the graphite **electrode**, hydrogen evolved from aqueous acidic solutions interferes with the **plating** process. The elimination of kinetic **current** arising due to hydrogen evolution enables one to study other processes proceeding at the **electrode**. Cyclic voltammograms for metal coating deposition/dissolution on the graphite **electrode** were measured at three scan rates (12.5, 25 and 50mV/s) and the EVLS functions were calculated for one or two eliminated currents. The **results** indicate the occurrence of surface reactions with the adsorption of intermediates on graphite. The application of EVLS provides deeper insight into the mechanism of **electrode** reaction during metal deposition. ©CPY 2004 Elsevier Ltd. All rights reserved. 20 Refs.

L7 ANSWER 9 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 2003(18):6751 COMPENDEX

TITLE: Characterization of pulse plated Cu₂O thin films.

AUTHOR: Mahalingam, T. (Department of Physics Alagappa University, Karaikudi 630 003, India); Chitra, J.S.P.; Ravi, G.; Chu, J.P.; Sebastian, P.J.

SOURCE: Surface and Coatings Technology v 168 n 2-3 May 22 2003 2003.p 111-114

ISSN: 0257-8972

PUBLICATION YEAR: 2003

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English
AN 2003(18):6751 COMPENDEX
AB Cuprous oxide (Cu₂O) thin films are synthesised on Cu and tin oxide coated substrates by electrochemical pulse plating technique. The effect of current density and duty cycle on the growth of Cu₂O films is studied. Structural studies reveal an optimum duty cycle of 33% to deposit well-crystallized Cu₂O film. The effect of deposition parameters on the structural and optical properties are carried out. It is observed that annealing below 350 deg C improved the crystallinity and grain size of Cu₂O films whereas annealing above 450 deg C exhibited the conversion of Cu₂O into CuO. Photoelectrochemical solar cell studies showed improved performance for Cu₂O electrodes and the results are discussed. ©CPY 2003 Elsevier Science B.V. All rights reserved. 16 Refs.

L7 ANSWER 10 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 1999(28):2935 COMPENDEX
TITLE: Pulse current plating of TiB₂ in molten fluoride.
AUTHOR: Ett, Gerhard (Nuclear and Energy Research Inst, Sao Paulo, Braz); Pessine, Elisabete J.
SOURCE: Electrochimica Acta v 44 n 17 1999.p 2859-2870
CODEN: ELCAAV ISSN: 0013-4686
PUBLICATION YEAR: 1999
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: English
AN 1999(28):2935 COMPENDEX
AB The investigation of TiB₂ electrodeposition was carried out using continuous current plating (CCP) and pulse current plating (PCP), electrochemical techniques to produce a uniform and a very low porosity coating. The solvent used is a fluoride mixture (LiF-NaF-KF) with solutes K₂TiF₆ and KBG4 in a mass relation of one to four after treatment to remove moisture. The temperature was 600 degree C and all results were obtained on graphite electrodes as substrate. When necessary, the working electrode potentials were monitored with a Ni/Ni₂ plus parallel BN reference electrode. The electrodeposition with pulse current plating produces coatings with better quality, showing fewer cracks and better adhesion to the substrate and no anode effect was observed, when compared with those obtained by continuous current plating, for the conditions: frequencies between 5-100 Hz, tc/toff between 5/1-3/1 or ic/loff-between 1.5 and 1.8. (Author abstract) 25 Refs.

L7 ANSWER 11 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 1998(32):848 COMPENDEX
TITLE: Modeling the galvanostatic pulse and pulse reverse plating of nickel-iron alloys on a rotating disk electrode.
AUTHOR: Schultz, Henning (Univ of Waterloo, Waterloo, Ont, Can); Pritzker, Mark
SOURCE: Journal of the Electrochemical Society v 145 n 6 Jun 1998.p 2033-2042
CODEN: JESOAN ISSN: 0013-4651
PUBLICATION YEAR: 1998
DOCUMENT TYPE: Journal
TREATMENT CODE: Bibliography; Theoretical
LANGUAGE: English
AN 1998(32):848 COMPENDEX
AB A model incorporating mass transfer effects, electrode kinetics, and homogeneous reaction is presented to describe galvanostatic pulse (PC) and pulse reverse (PR) plating of nickel-iron alloys from a sulfate bath onto a rotating disk electrode. It has been satisfactorily fit to experimental data taken from the literature and then used to investigate the effects of pulse mode and pulse parameters and to

compute the transient responses of the partial current densities and concentration profiles. A comparison of the effect of pulse mode on plating confirmed previously reported evidence that PC plating tends to produce alloys with similar iron content to those obtained by dc plating, particularly at high current. PR plating has been shown to be the most effective method of controlling iron content in the alloys. By increasing the ratio of the anodic pulse amplitude to the cathodic pulse amplitude, the extent of anomalous codeposition and the sensitivity of alloy composition to the applied current can be reduced. Analysis of the transient partial current densities confirmed experimental evidence that this improvement is due to preferential dissolution of iron during the anodic pulses. (Author abstract) 53 Refs.

L7 ANSWER 12 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1995(17):6113 COMPENDEX

TITLE: Application of scanning vibrating electrode technique to study the localized corrosion of hardfacing alloy in sodium chloride solution.

AUTHOR: Tsuru, Yutaka (Kyushu Inst of Tech., Tobata-ku, Jpn); Sekitani, Masanori; Nakamura, Zyunichi; Saitou, Akio

SOURCE: Zairyo/Journal of the Society of Materials Science, Japan v 43 n 494 Nov 1994 p 1387-1392

CODEN: ZARYAQ ISSN: 0514-5163

PUBLICATION YEAR: 1994

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

LANGUAGE: Japanese

AN 1995(17):6113 COMPENDEX

AB A micro-electrode consisting of an Ag/AgCl reference electrode was prepared by using the electroplating method on a tungsten wire as a corrosion current sensor for the scanning vibrating electrode technique (SVET), and it was applied to measure the corrosion current profile over a hardfacing alloy after corrosion in 10minus 3 M sodium chloride. A good correlation was observed between the pitting corrosion current profile and the surface morphology of the corroded specimen. The pitting corrosion of the specimen developed in a chromium depleted zone between beads of weld metal, and manganese sulphide inclusions were always found in the pits along the chromium depleted zone. (Author abstract) 12 Refs.

L7 ANSWER 13 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1994(33):547 COMPENDEX

TITLE: Sulphur content and the hydrogen evolving activity of NiSx deposits using statistical experimental strategies.

AUTHOR: Wen, T.-C. (National Cheng Kung Univ, Tainan, Taiwan); Lin, S.-M.; Tsai, J.-M.

SOURCE: Journal of Applied Electrochemistry v 24 n 3 Mar 1994 p 233-238

CODEN: JAELBJ ISSN: 0021-891X

PUBLICATION YEAR: 1994

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

LANGUAGE: English

AN 1994(33):547 COMPENDEX

AB The effect of such electroplating conditions as current density, thiourea (TU) concentration, temperature and pH on the sulphur content of NiSx deposited electrodes has been systematically studied using fractional factorial design and response surface methodology. Fractional factorial analysis indicates that the main and interaction effects of TU concentration and current density are the key variables influencing sulphur content in a NiSx deposit. The

result show that, for deposits containing greater than 12 wt % sulphur content, hydrogen evolving activity increases with increasing sulfur content, while for those possessing less than 12 wt % sulphur content, hydrogen evolution overpotential decreases with increasing electroplating current density. (Edited author abstract)
17 Refs.

L7 ANSWER 14 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 1987(6):96936 COMPENDEX
TITLE: KINETICS OF COPPER DISSOLUTION AT OXYGEN FREE AND PHOSPHORIZING ANODES.
AUTHOR: Reid, Jonathan D. (IBM, Endicott, NY, USA); David, Allan P.
MEETING TITLE: American Institute of Chemical Engineers 1986 Annual Meeting.
MEETING ORGANIZER: AIChE, New York, NY, USA
MEETING LOCATION: Miami Beach, FL, USA
MEETING DATE: 02 Nov 1986-07 Nov 1986
SOURCE: American Institute of Chemical Engineers, National Meeting 1986. Publ by AIChE, New York, NY, USA Pap 61a, 33p
CODEN: ACENC9
PUBLICATION YEAR: 1986
MEETING NUMBER: 09516
DOCUMENT TYPE: Conference Article
LANGUAGE: English

AN 1987(6):96936 COMPENDEX

AB The steady-state current potential and impedance characteristics of copper disk electrodes submerged in typical sulfuric acid cupric sulfate plating solutions were studied. A single charge transfer step limits the dissolution rate over a wide range of interfacial current densities and solution agitation conditions at pure and oxygen free copper anodes. At phosphorized anodes, two kinetic steps contribute to limit the overall dissolution rate under most conditions. Addition of polyethylene glycol and chloride ion to solution polarized the dissolution process at each of the anode materials. Polarization appeared to result from formation of an adsorbed barrier to diffusion of dissolved ions from the interface, rather than a change in the dissolution mechanism. (Author abstract) 15 refs.

L7 ANSWER 15 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN

ACCESSION NUMBER: 1985(11):155330 COMPENDEX
DOCUMENT NUMBER: *8516632
; 851199412
TITLE: Optimization of the High Speed Chromium-plating Process in Sulfate and Tetrachromate Electrolytes. OPTIMIERUNG DER HOCHGESCHWINDIGKEITS-VERCHROMUNG IN SULFAT- UND TETRACHROMATELEKTRYTEN.
AUTHOR: Drela, I. (Politechnika Wroclawska, Wroclaw, Pol); Kubicki, J.
SOURCE: Metalloberflaeche v 39 n 5 May 1985 p 177-181
CODEN: MOFEAV ISSN: 0026-0797
PUBLICATION YEAR: 1985
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
LANGUAGE: German

AN 1985(11):155330 COMPENDEX DN *8516632; 851199412

AB The authors report on investigations of the chromium-plating process at high current densities. For this purpose, use was made of rotary disk electrodes made out of platinum and the statistical method of experiment planning. The results obtained indicate that the parameters examined - current efficiency, electricity consumption per quantity of chromium deposited rate of deposition, microhardness and brightness of the chromium coating - depend in a complex

way on various factors. (Edited author abstract) 14 refs. In German.

L7 ANSWER 16 OF 36 COMPENDEX COPYRIGHT 2006 EEI on STN
ACCESSION NUMBER: 1976(1):3830 COMPENDEX
DOCUMENT NUMBER: 76011495
TITLE: Effect of Electrolyte Temperature on Glossy Electrolytic Copper Plating Carried out in a Pyrophosphate Bath.
EFFECTUL TEMPERATURII ELECTROLITULUI ASUPRA PROCESULUI DE CUPRARE LUCIOASA DIN BAI PE BAZA DE PIROFOSFAT.
AUTHOR: Radovici, O. (Centrul de Chim Fiz din Bucuresti, Rom); Vass, Cecilia; Solacolu, I.
SOURCE: Electrotehnica v 22 n 2 Feb 1974 p 63-66
CODEN: ELTTA3
PUBLICATION YEAR: 1974
LANGUAGE: Romanian
AN 1976(1):3830 COMPENDEX DN 76011495
AB The authors present the **results** of a study of the influence of the electrolyte temperature in a glossy copper plating pyrophosphate bath on **electrode bias, current efficiency and plating structure**. 5 refs. In Rumanian.

L7 ANSWER 17 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2006:8711461 INSPEC
TITLE: Investigation on capacitance mechanisms of Fe₃O₄ electrochemical capacitors
AUTHOR: Shih-Yu Wang; Kuo-Chuan Ho; Shin-Liang Kuo; Nae-Lih Wu (Dept. of Chem. Eng., Nat. Taiwan Univ., Taipei, Taiwan)
SOURCE: Journal of the Electrochemical Society (Jan. 2006), vol.153, no.1, p. A75-80, 20 refs.
CODEN: JESOAN, ISSN: 0013-4651
SICI: 0013-4651(200601)153:1L.a75:ICMF;1-J
Price: 0013-4651/2006/153(1)/A75/6/\$7.00
Doc.No.: S0013-4651(06)04401-6
Published by: Electrochem. Soc, USA
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: United States
LANGUAGE: English
AN 2006:8711461 INSPEC
AB The capacitance mechanisms of magnetite (Fe₃O₄) electrochemical capacitor in Na₂SO₃, Na₂SO₄, and KOH aqueous solutions have been investigated by electrochemical quartz-crystal microbalance analysis, along with cyclic voltammetry and X-ray photoelectron spectroscopy. The oxide thin-film electrode was prepared by an **electroplating** method, and exhibits a capacitance of 170, 25, and 3 F/g in 1.0 M Na₂SO₃(aq), Na₂SO₄(aq), and KOH(aq), respectively. Strong specific adsorption of the anion species was evidenced in all solutions. Experimental **results** indicate that, in Na₂SO₃(aq), the capacitive current of magnetite electrode originates from the combination of electric double-layer capacitance (EDLC) and the pseudocapacitance that involves successive reduction of the specifically adsorbed sulfite anions, from SO₃²⁻ through, e.g., S²⁻, and vice versa. In Na₂SO₄(aq), the current is due entirely to EDLC. Furthermore, due to the specific adsorption behavior, magnetite exhibits high EDLC, >30 μF/cm², in both Na₂SO₃ and Na₂SO₄ solutions. The lowest capacitance of magnetite was observed in KOH, which is attributed to the formation of an insulating layer on the magnetite surface

L7 ANSWER 18 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2004:8090414 INSPEC
DOCUMENT NUMBER: A2004-20-8115L-027
TITLE: Magnetic effect during copper electrodeposition:

AUTHOR: diffusion process considerations
Fricoteaux, P.; Jonvel, B.; Chopart, J.-P. (DTI, Univ.
de Reims, France)
SOURCE: Journal of Physical Chemistry B (4 Sept. 2003),
vol.107, no.35, p. 9459-64, 37 refs.
CODEN: JPCBFK, ISSN: 1089-5647
SICI: 1089-5647(20030904)107:35L.9459:MEDC;1-F
Price: 1089-5647/2003/\$25.00
Published by: ACS, USA
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English

AN 2004:8090414 INSPEC DN A2004-20-8115L-027
AB The copper electrodeposition from a sulfuric acid solution under magnetic field influence has been investigated. **Results** show that the apparent modifications of current-overpotential curves in the kinetic domain deal with modifications of a real electrode surface. An original cell able to jam the magnetoconvection was used to demonstrate that only a convective effect appears during copper plating under a magnetic field. A new relationship of the limiting current that takes into account the involved electron number to the power 4/3 and the kinematic viscosity to the power -2/3 can be established

L7 ANSWER 19 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2004:8089869 INSPEC
DOCUMENT NUMBER: A2004-20-8245-020
TITLE: Cobalt electroplating on nickel foam to improve performance of nickel positive electrode
AUTHOR: Wang Dian-long; Liu Ying; Dai Chang-song; Jiang Zhao-hua (Dept. of Appl. Chem., Harbin Inst. of Technol., China)
SOURCE: Battery Bimonthly (April 2004), vol.34, no.2, p. 104-5, 1 refs.
CODEN: DNCHEP, ISSN: 1001-1579
SICI: 1001-1579(200404)34:2L.104:CENF;1-G
Published by: Hunan Light Ind. Res. Inst, China
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical
COUNTRY: China
LANGUAGE: Chinese

AN 2004:8089869 INSPEC DN A2004-20-8245-020
AB The effects of electroplating of cobalt on nickel foam substrate on the discharge capacity of nickel positive electrode, especially the discharge at high rate were studied. The **results** showed that the cobalt electroplating layer on nickel foam substrates could improve the conductive network between active materials and foam nickel substrate, reduce the contact resistance between them and improve the high rate charge-discharge performance of nickel electrode

L7 ANSWER 20 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2003:7752184 INSPEC
DOCUMENT NUMBER: A2003-22-8115L-031
TITLE: Low- and high-frequency pulse current and pulse reverse plating of copper
AUTHOR: Tantavichet, N.; Pritzker, M.D. (Dept. of Chem. Eng., Univ. of Waterloo, Ont., Canada)
SOURCE: Journal of the Electrochemical Society (Oct. 2003), vol.150, no.10, p. C665-77, 36 refs.
CODEN: JESOAN, ISSN: 0013-4651
SICI: 0013-4651(200310)150:10L.C665:HFPC;1-P
Price: 0013-4651/2003/150(10)/C665/13/\$7.00
Doc.No.: S0013-4651(03)01910-4
Published by: Electrochem. Soc, USA

DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English
AN 2003:7752184 INSPEC DN A2003-22-8115L-031
AB A model for galvanostatic pulse plating via pulse current (PC) and pulse reverse (PR) modes has been developed and compared with experimentally obtained electrode responses during copper deposition from a CuSO₄-H₂SO₄ solution onto a rotating disk electrode. In addition to all forms of mass transport, electrode kinetics, and homogeneous reactions, the model incorporates capacitance effects due to double-layer charging and adsorption of an intermediate. Two important modifications from our previous model have been made: fully transient rather than steady-state electrode kinetics and a series rather than parallel connection between the adsorption pseudocapacitance and faradaic reactions. The model provides excellent quantitative agreement with the experimental results for both PR and PC plating for the entire range of conditions studied and shows considerable improvement over the previous version, particularly for PR plating. Fitting the model to some of the experimental data reveals that the double-layer capacity varies inversely with the square root of frequency for pulses of 500 Hz or more. Electrode responses do not totally become dc-like at frequencies as high as 50 kHz. Furthermore, at high enough frequencies (\geq 5 kHz) during PR plating, the electrode potentials do not rise above the open-circuit potential during the reverse-time, indicating that copper dissolution does not occur and leading to a response similar to that observed during high-frequency PC plating

L7 ANSWER 21 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2003:7710504 INSPEC
DOCUMENT NUMBER: A2003-19-7865P-002
TITLE: Characterization of pulse plated Cu₂O thin films
AUTHOR: Mahalingam, T.; Chitra, J.S.P.; (Dept. of Phys., Alagappa Univ., Karaikudi, India), Ravi, G.; Chu, J.P.; Sebastian, P.J.
SOURCE: Surface & Coatings Technology (22 May 2003), vol.168, no.2-3, p. 111-14, 16 refs.
CODEN: SCTEEJ, ISSN: 0257-8972
SICI: 0257-8972(20030522)168:2/3L.111:CPPC;1-9
Price: 0257-8972/03/\$30.00
Doc.No.: S0257-8972(03)00211-1
Published by: Elsevier, Switzerland
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: Switzerland
LANGUAGE: English
AN 2003:7710504 INSPEC DN A2003-19-7865P-002
AB Cuprous oxide (Cu₂O) thin films are synthesised on Cu and tin oxide coated substrates by electrochemical pulse plating technique. The effect of current density and duty cycle on the growth of Cu₂O films is studied. Structural studies reveal an optimum duty cycle of 33% to deposit well-crystallized Cu₂O film. The effect of deposition parameters on the structural and optical properties are carried out. It is observed that annealing below 350°C improved the crystallinity and grain size of Cu₂O films whereas annealing above 450°C exhibited the conversion of Cu₂O into CuO. Photoelectrochemical solar cell studies showed improved performance for Cu₂O electrodes and the results are discussed

L7 ANSWER 22 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2003:7660627 INSPEC
DOCUMENT NUMBER: A2003-15-8630F-009; B2003-07-8410E-048

TITLE: R&D of current collector of negative electrode for zinc-nickel secondary battery

AUTHOR: Yang En-dong; Yang Hua-bin; Ji Jing-tao; Sun Hua; Wang Xiao-dan; Zhou Zuo-xiang; Yuan Hua-tang (Inst. of New Energy Material Chem., Nankai Univ., Tianjin, China)

SOURCE: Chinese Journal of Power Sources (Jan. 2003), vol.27, no.1, p. 31-5, 12 refs.

CODEN: DIJIFT, ISSN: 1002-087X

SICI: 1002-087X(200301)27:1L.31:CCNE;1-L

Published by: Tianjin Inst. Power Sources, China

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

COUNTRY: China

LANGUAGE: Chinese

AN 2003:7660627 INSPEC DN A2003-15-8630F-009; B2003-07-8410E-048

AB The properties of zinc **electrodes** using various metals and Cu-Zn alloy (brass) as current collectors were studied by potentiostatic polarization method. The **results** show that brass, which has even properties and good combination property, is a good current collector for zinc **electrode** because its properties, such as self-corrosion potential, overpotential of hydrogen evolution, corrosion current density, Tafel slope β_a , passivation potential ϕ_p and passivation current density, are similar to those of silver. Foamed brass was prepared by chemical **plating** Cu on the surface of foamed plastic and then alloy **electroplating** brass. The material, as a **current collector**, can avoid the over-saturation of zincate solution, inhibit the growth of zinc dentrite, improve the charge/discharge performance, and increase the cycle life of zinc **electrode**

L7 ANSWER 23 OF 36 INSPEC (C) 2006 IET on STN

ACCESSION NUMBER: 2002:7385890 INSPEC

DOCUMENT NUMBER: A2002-21-8115L-019; B2002-10-0520J-037; C2002-10-7480-115

TITLE: A new 3D **electroplating** simulation & design tool

AUTHOR: Druesne, F.; (Dpt. Calcul, CETIM, Senlis, France), Afzali, M.; Mouton, R.

SOURCE: Plating and Surface Finishing (June 2002), vol.89, no.6, p. 20-4, 12 refs.

CODEN: PSFMDH, ISSN: 0360-3164

SICI: 0360-3164(200206)89:6L.20:ESDT;1-3

Published by: American Electroplaters & Surface Finishers Soc, USA

DOCUMENT TYPE: Journal

TREATMENT CODE: New Development; Practical; Theoretical

COUNTRY: United States

LANGUAGE: English

AN 2002:7385890 INSPEC DN A2002-21-8115L-019; B2002-10-0520J-037; C2002-10-7480-115

AB **Electroplating** process energy and material costs are very important considerations in product manufacturing. The most important **plating** criteria, however, are quality and plated uniformity of the deposited metals. Simulation tools can help to obtain better **plating results**. New **plating** simulation tools are now available that will run on PC/Windows® computers and can point the way to optimizing many common **electroplating** processes. Software packages are available that are versatile and user-friendly. These tools have been designed to optimize **electroplating** cells and racks. An accurate analysis is required to determine distribution of deposited thickness, current densities, and electrode potentials. A good **plating** simulation tool can help an engineering team find the most reliable rack configuration based on the geometrical description of rack, the parts to be plated, and from

calculation of the electrochemical properties of the process being studied

L7 ANSWER 24 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2002:7235943 INSPEC
DOCUMENT NUMBER: A2002-10-8115L-033
TITLE: Studying non-uniform electrodeposition using the wire beam electrode method
AUTHOR: Yong-Jun Tan (Sch. of Mater. Eng., Nanyang Technol. Univ., Singapore)
SOURCE: International Journal of Modern Physics B (20 Jan. 2002), vol.16, no.1-2, p. 144-50, 17 refs.
CODEN: IJPBEV, ISSN: 0217-9792
SICI: 0217-9792(20020120)16:1/2L.144:SUEU;1-4
Published by: World Scientific, Singapore
Conference: Crystallization and Interfacial Processes. Symposium D of the International Conference on Material for Advanced Technologies 2001, Singapore, 1-6 July 2001
DOCUMENT TYPE: Conference; Conference Article; Journal
TREATMENT CODE: Experimental
COUNTRY: Singapore
LANGUAGE: English
AN 2002:7235943 DN A2002-10-8115L-033
AB Nonuniform electrodeposition is a major concern in almost every practical electrodeposition application. The ability to control nonuniformity in electrodeposition is the key to successful plating for corrosion resistance, and more especially to meeting the very exacting requirements of electroforming, electrodeposition of nanoscale and nanophase materials, and various other engineering uses of electrodeposition. This paper presents a novel technique namely the wire beam electrode (WBE) for characterizing and monitoring nonuniform electroplating processes. For the first time, the nonuniform distribution of electroplating currents (NDEC) has been mapped. Preliminary experimental results indicated that electrochemical heterogeneity was the key factor affecting NDEC. The secondary current distribution, rather than the primary current distribution, played a major role in determining the NDEC. This work suggests that the WBE is a practical tool for characterizing and optimizing electrodeposition processes and for verifying the accuracy and completeness of mathematic modelling of electrodeposition processes

L7 ANSWER 25 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 2002:7195591 INSPEC
DOCUMENT NUMBER: A2002-07-6855-092
TITLE: Effect of electrolytic conditions on the crystal orientation of electrodeposited zinc
AUTHOR: Kurosaki, M.; Yamasaki, N. (Steel Res. Lab., Nippon Steel Corp., Chiba, Japan)
SOURCE: Second International Conference on Processing Materials for Properties. Proceedings, 2000, p. 773-8 of xxxviii+1137 pp., 11 refs.
Editor(s): Mishra, B.; Yamauchi, C.
ISBN: 0 87339 495 X
Published by: TMS - Miner. Metals & Mater. Soc, Warrendale, PA, USA
Conference: Second International Conference on Processing Materials for Properties. Proceedings, San Francisco, CA, USA, 5-8 Nov. 2000
Sponsor(s): Minerals, Metals & Mater. Soc. - TMS; Mining & Mater. Process. Inst. Japan
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Theoretical; Experimental
COUNTRY: United States

LANGUAGE: English
AN 2002:7195591 INSPEC DN A2002-07-6855-092
AB The effects of plating conditions on the crystal orientation of electrodeposited zinc were investigated by varying electrolyte flow rate and current density. Precipitation of the Zn (00.2) basal plane is promoted at lower current density and higher flow velocity. The effect of the flow velocity on the mass transport was evaluated based on the polarization measurement in which Cu was used as the tracer. As a result, it has been clarified that the crystal orientation of electrodeposited zinc can be uniquely arranged by the overvoltage ($i_{U-0.5}$) that can be simply calculated by considering the current density and boundary layer thickness. At the same time, the electrode potential during electrodeposition which can be calculated by using a model based on the competitive reactions of hydrogen reduction and zinc reduction exhibits an extremely good correlation with the crystal orientation of electrodeposited zinc

L7 ANSWER 26 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1997:5776139 INSPEC
DOCUMENT NUMBER: A1998-02-8115L-017; B1998-01-0520-039
TITLE: New electrochemical method to study nuclei formation in electrodeposition
AUTHOR: Yu Weiping; (Beijing Univ. of Aeronaut. & Astronaut., China), Duan Shuzhen
SOURCE: Journal of Beijing University of Aeronautics and Astronautics (Aug. 1997), vol.23, no.4, p. 530-4, 5 refs.
CODEN: BHHDE8, ISSN: 1001-5965
SICI: 1001-5965(199708)23:4L.530:EMSN;1-0
Published by: Beijing Univ. of Aeronaut. & Astronaut, China
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: China
LANGUAGE: Chinese
AN 1997:5776139 INSPEC DN A1998-02-8115L-017; B1998-01-0520-039
AB A square current wave with a small amplitude was superimposed on the plating current to study the nuclei formation in electrodeposition. It has been confirmed, theoretically, that the responding chronopotentiogram can be used to describe the character of the electrode in electrodeposition and the overpotential peak is caused by the sluggish nucleation. It was shown from experimental results that, in the initial stage of plating Ni-P amorphous alloy, the required energy to form nuclei was much smaller than that in the case of plating crystalline Ni

L7 ANSWER 27 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1995:4975691 INSPEC
DOCUMENT NUMBER: A1995-14-8780-003; B1995-08-7500-001
TITLE: A study on the fabrication of micro biological cell-manipulator
AUTHOR: Sang-Wook Lee; Yong-Kweon Kim
SOURCE: Transactions of the Korean Institute of Electrical Engineers (Feb. 1995), vol.44, no.2, p. 186-91, 11 refs.
CODEN: CHNODD, ISSN: 0254-4172
DOCUMENT TYPE: Journal
TREATMENT CODE: Application; Practical
COUNTRY: Korea, Democratic Peoples Republic of
LANGUAGE: Korean
AN 1995:4975691 INSPEC DN A1995-14-8780-003; B1995-08-7500-001
AB The fabrication process of microbiological cell-manipulators is presented. The microbiological cell-manipulators are composed of flow channels, insulating structures and electrodes whose thickness is about

20 μm . The insulating structures and the flow channels are fabricated using a photosensitive polyimide by a photolithography process. Using a conductive substrate (n-type silicon), the electrodes are **electroplated** selectively on the **electroplating site** without any seed layers. Also, the boron implantation process is added for the reduction of the leakage current beneath the electrodes. In **experimental results**, the leakage current is reduced from 100nA to 24 nA. The fusion chamber and the selector are designed and fabricated, and the fabrication process and the fabrication **results** are discussed

L7 ANSWER 28 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1995:4843588 INSPEC
DOCUMENT NUMBER: A1995-02-8160B-018
TITLE: Application of scanning vibrating electrode technique to study the localized corrosion of hardfacing alloy in sodium chloride solution
AUTHOR: Tsuru, Y.; (Dept. of Mater. Sci. & Eng., Kyushu Inst. of Technol., Kitakyushu, Japan), Sekitani, M.; Nakamura, Z.; Saitou, A.
SOURCE: Journal of the Society of Materials Science, Japan (Nov. 1994), vol.43, no.494, p. 1387-92, 12 refs.
CODEN: ZARYAQ, ISSN: 0514-5163
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: Japan
LANGUAGE: Japanese
AN 1995:4843588 INSPEC DN A1995-02-8160B-018
AB A micro-electrode consisting of an Ag/AgCl reference electrode was prepared by using the **electroplating** method on a tungsten wire as a corrosion current sensor for the scanning vibrating electrode technique (SVET), and it was applied to measure the corrosion current **profile** over a hardfacing alloy after corrosion in 10-3 M sodium chloride. A good correlation was observed between the pitting corrosion current **profile** and the surface morphology of the corroded specimen. The pitting corrosion of the specimen developed in a chromium depleted zone between beads of weld metal, and manganese sulphide inclusions were always found in the pits along the chromium depleted zone

L7 ANSWER 29 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1990:3542330 INSPEC
DOCUMENT NUMBER: B1990-011623
TITLE: Sensors for ferric ion in plating solutions
AUTHOR: Savinell, R.F.; (Case Western Reserve Univ., Cleveland, OH, USA), Tianying Mi; Chi-Jin Chen; Chung-Chiun Liu
SOURCE: Plating and Surface Finishing (Aug. 1989), vol.76, no.8, p. 40-4, 5 refs.
CODEN: PSFMDH, ISSN: 0360-3164
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English
AN 1990:3542330 INSPEC DN B1990-011623
AB Chemical sensors based on electrochemical principles and fabricated by microelectronic thick film metallization technique are being developed for the detection of ions in plating solutions. The advantage of this approach is that small, reliable and fast-responding sensors can be developed by placing the sensing elements-working, counter and reference electrodes-of an electrochemical cell on a single, small substrate. The **results** of earlier reported mathematical models were applied to the design of an optimal-performing array of gold band electrodes for the sensor. The **results** of testing this sensor

on quantitative detection of ferric ion in zinc-iron plating baths are described. A sensor response based on the transient current output following a cathodic potential step was found to be linear and reproducible with ferric ion concentration in the range of 0 to 0.1 M. The sensor was stable and reproducible in a test lasting more than 26 days. The sensor output was not significantly affected by the presence of citric acid. A protecting shield eliminated any solution flow effects. This sensor design works well for this application and could be useful for other plating applications as well

L7 ANSWER 30 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1982:1825042 INSPEC
DOCUMENT NUMBER: A1982-031930; B1982-018809
TITLE: The use of graphite cloth electrodes for the recovery and separation of gold
AUTHOR: Zur, C.; Ariel, M. (Dept. of Chem., Technion-IIT, Haifa, Israel)
SOURCE: Journal of Applied Electrochemistry (Sept. 1981), vol.11, no.5, p. 639-44, 10 refs.
CODEN: JAELBJ, ISSN: 0021-891X
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United Kingdom
LANGUAGE: English
AN 1982:1825042 INSPEC DN A1982-031930; B1982-018809
AB The electrodeposition and recovery of gold from spent electroplating, bath solutions using a graphite cloth electrode in a flow-through cell is described. Optimized conditions of flow rate, current densities, screen potentials and additives were established to achieve high-percentage recoveries and good separation of the Au from admixtures of base metals (Cu, Cd). The results are sufficiently encouraging to serve as the basis for a scaled-up process

L7 ANSWER 31 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1980:1466564 INSPEC
DOCUMENT NUMBER: B1980-011662
TITLE: Gold diffusion barrier
AUTHOR: Mansbridge, D.S.; Morgan, W.M. (IBM Corp., Armonk, NY, USA)
SOURCE: IBM Technical Disclosure Bulletin (July 1979), vol.22, no.2, p. 807, 0 refs.
CODEN: IBMTAA, ISSN: 0018-8689
DOCUMENT TYPE: Journal
TREATMENT CODE: Application
COUNTRY: United States
LANGUAGE: English
AN 1980:1466564 INSPEC DN B1980-011662
AB In the fabrication of an integrated passive display device, e.g. liquid crystal or electrochromic, an array of silver electrodes may be formed by electroplating. The silver electrode array metallurgy is itself defined by an underlying evaporated gold contact pattern, exposed through a polyimide insulating layer, and through which plating current can be passed. The process requires that the polyimide should be cured finally at 350°C after evaporation of the gold. As a result of this curing, a tenacious organic film is formed on the gold which inhibits subsequent plating. The problem is overcome by evaporating 1000-2000 Å of nickel over the gold to act as a diffusion barrier

L7 ANSWER 32 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1976:857816 INSPEC
DOCUMENT NUMBER: B1976-007705
TITLE: Deep electrochemical palladium plating for the activation of the gas diffusion electrodes of fuel

cells
AUTHOR: Balasescu, Gh.; Ionescu, D. (ICPE, Bucuresti, Romania)
SOURCE: Lucrarile ICPE (1975), no.30, p. 119-24, 6 refs.
CODEN: LICPAU, ISSN: 0250-3034
DOCUMENT TYPE: Journal
TREATMENT CODE: Application; Practical
COUNTRY: Romania
LANGUAGE: Romanian
AN 1976:857816 INSPEC DN B1976-007705
AB Presents several **results**, concerning deep uniform catalyst plating, using a superposed currents technique. Experiments contributed to the elaboration of an apparatus by means of which the working conditions of the palladium plating in sintered nickel porous structures are studied and established

L7 ANSWER 33 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1975:704254 INSPEC
DOCUMENT NUMBER: B1975-000482
TITLE: Current distribution on resistive metal electrodes
AUTHOR: Tvarusko, A. (Western electric Co., Princeton, NJ, USA)
SOURCE: Plating (Sept. 1974), vol.61, no.9, p. 846-9, 20 refs.
CODEN: PLATAT, ISSN: 0032-1397
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: United States
LANGUAGE: English
AN 1975:704254 INSPEC DN B1975-000482
AB Current distribution was measured in situ on metal wires of various resistances during electrodeposition and reduction of redox species. The nonuniformity of the current distribution along the wires increased with increasing substrate resistance and applied current. Small diameter wires with various **electroplated** layers used for magnetic plated wire memories, and thin, narrow, copper deposits on printed and miniaturized circuits are discussed in detail

L7 ANSWER 34 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1974:640545 INSPEC
DOCUMENT NUMBER: B1974-022064
TITLE: Influence of electrolyte temperature on glossy electrolytic copper plating carried out in pyrophosphate bath
AUTHOR: Radovici, O.; Vass, C.; Solacolu, I.
SOURCE: Electrotehnica (Feb. 1974), vol.22, no.2, p. 63-6, 5 refs.
CODEN: ELTTA3, ISSN: 0013-5321
DOCUMENT TYPE: Journal
TREATMENT CODE: Experimental
COUNTRY: Romania
LANGUAGE: Romanian
AN 1974:640545 INSPEC DN B1974-022064
AB Presents **results** of a study carried out to assess the influence of the electrolyte temperature, in a glossy copper plating pyrophosphate bath, on electrode bias, current efficiency and plating structure

L7 ANSWER 35 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1972:434861 INSPEC
DOCUMENT NUMBER: B1972-034976
TITLE: Plating fixture
AUTHOR: Bacon, D.E.; Ketner, D.E.
SOURCE: Technical Digest (April 1972), no.26, p. 5
CODEN: TCHDAV, ISSN: 0497-0411
DOCUMENT TYPE: Journal

TREATMENT CODE: New Development
COUNTRY: United States
LANGUAGE: English
AN 1972:434861 INSPEC DN B1972-034976
AB In an **electroplating** operation, problems frequently occur when **electrode** contacts corrode and the **plating** current changes as a **result** of the corroded contacts. Such problems, due to faulty current connections, are most likely to occur when a spring clamp connecting a cable to a **plating** rack loses its tension due to corrosion. These problems are reduced to a minimum with the present **plating** fixture and a cam mechanism to establish electrical contact to the **plating** fixture

L7 ANSWER 36 OF 36 INSPEC (C) 2006 IET on STN
ACCESSION NUMBER: 1971:308010 INSPEC
DOCUMENT NUMBER: B1971-036093
TITLE: Deposition of chrome-containing iron
electroplating
AUTHOR: Sass, S.
SOURCE: Lectures of the 3rd symposium on electroplating, 1971,
p. 203-12 of iii+242 pp.
Published by: Sci. Soc. Mech. Engrs, Budapest, Hungary
Conference: Lectures of the 3rd symposium on
electroplating, Budapest, Hungary, 1-3 Dec. 1970
Sponsor(s): Sci. Soc. Mech. Engrs
Conference; Conference Article
DOCUMENT TYPE:
TREATMENT CODE: Experimental
COUNTRY: Hungary
LANGUAGE: German
AN 1971:308010 INSPEC DN B1971-036093
AB Iron **electroplating** is important for protection from erosion by solder of copper soldering bits. **Results** of experiments in **electroplating** are described with reference to **electrolyte**, **temperature**, **current density**, **electrode** spacing, and **time**. Tabular summaries are given